THE **CONFERENCE BOARD**

How New and Emerging AI Will Affect US Government Human Capital Management

The use of advanced AI in human capital management (HCM) is accelerating. From workforce planning, where algorithms identify skills gaps and the potential means to fill them, through sourcing and recruiting talent, AI's role in HCM is of increasing importance within the US government.

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- **To fully leverage advanced and emerging forms of AI, government chief human capital officers (CHCOs) may have a steeper hill to climb than their private sector counterparts**. Agencies already make extensive use of AI, including in human capital management. Overcoming challenges related to governance, data quality, and building AI capacity requires careful planning, collaboration, and a strategic vision.

- **AI adoption brings organizational challenges around governance, ethics, and risk**. In partnership with other agency executives, the CHCO has a pivotal role in ensuring a human-centered, ethical, and accountable governance mode that not only supports but propels the US government AI and digital agenda.

- **AI models depend on quality data, yet across many agencies, workforce data is siloed, incomplete, and error ridden**. CHCOs should formulate a long-term plan for developing their workforce data assets, including consolidating employee data across departments. They should start by identifying a small set of vital metrics that align with their objectives and conduct an audit to identify where the data are housed and who "owns" the data.

- **Building AI capabilities is likely to prove HCM's greatest challenge and contribution to AI in government**. HCM's responsibilities include building basic AI literacy and skills, creating a culture receptive to digital and AI transformation, and acquiring proven technologies that leverage advanced AI.
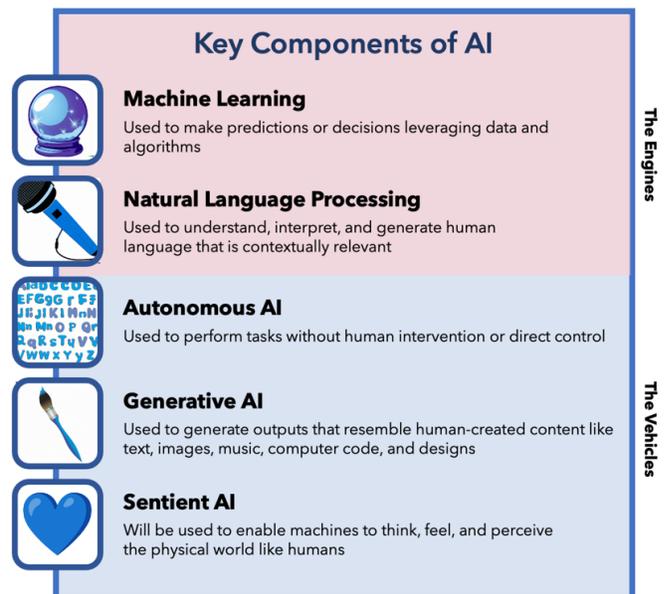
A Steeper Hill to Climb

For CHCOs and HR professionals in government departments and agencies, the implications of advanced AI resemble those in the commercial sector. Whether in business or government, the use of advanced AI is likely to accelerate, profoundly reshaping HCM and organizations.

White House Executive Order 13960 declares that "Given the broad applicability of AI, nearly every agency and those served by those agencies can benefit from the appropriate use of AI." Yet due to aging technology, widespread issues with data quality and availability, nonexistent AI governance frameworks, and AI skills and talent gaps even wider than those in the private sector, the AI challenges government agencies and their HCM teams face are steep.

Among the obstacles standing in the way of AI's potential in government HCM are layers of bureaucracy, budget constraints, data fragmentation and lack of privacy, risk aversion, stakeholder management, and the sheer scale and complexity of managing change across a two-million-person operation. And just as Hollywood studios have faced challenges from its screenwriters union around the use of AI, government will almost certainly need to negotiate with public sector unions before implementing AI that might significantly affect the workforce.

These problems put government at a disadvantage relative to most private sector organizations. However, innovative leadership by HCM executives, careful planning, collaboration, and a strategic vision for advanced AI and digitization in HCM itself lay the foundation for AI transformation across the agency and broader government workforce.

Indeed, teams across government agencies are currently leading hundreds of projects involving advanced AI and machine learning, and many center on HCM. In an August 2023 AI roundtable hosted by The Conference Board, participants spoke about their experiments in using AI, including tools that generate skills models that can cut through the thousands of résumés received for most

Key Components of AI

Machine Learning
Used to make predictions or decisions leveraging data and algorithms

Natural Language Processing
Used to understand, interpret, and generate human language that is contextually relevant

The Engines

Autonomous AI
Used to perform tasks without human intervention or direct control

Generative AI
Used to generate outputs that resemble human-created content like text, images, music, computer code, and designs

Sentient AI
Will be used to enable machines to think, feel, and perceive the physical world like humans

The Vehicles

Source: The Conference Board, 2023

vacancies to quickly find the most qualified, and algorithms that can match existing talent to internal opportunities with unprecedented precision. At the same time, agencies are considering

how AI might flag potential falsehoods in résumés and uncover chokepoints or even instances of bias throughout the talent acquisition process.

AI Governance Challenges

A critical pillar for leveraging AI in government HCM is establishing robust governance systems and guidance for AI talent, related data, and technological assets. Such systems must cater to the demands of internal stakeholders—spanning various business units and functions—as well as the requirements of external entities including clients, the public, partners, and political leadership.

A sound governance framework, whether for HCM or the entire agency, should focus on several core areas:

- **Access**: Define who has entry to specific data assets, under what circumstances, and within what permissions and limitations.

- **Integration**: Outline how data and software interface across platforms and agency divisions.

- **Quality**: Develop procedures for ongoing evaluation and enhancement of capabilities, including data, skills, culture, and technologies.

- **Bias and transparency**: Keep "the human in the loop" to review AI algorithms and generative outputs for bias and inaccuracies. Ensure that AI recommendations that lead to consequential recommendations can be explained.

- **Security**: Establish protocols to safeguard assets and people (employees, clients, etc.) against both internal and external threats, including privacy and bias.

- **Costs**: Government budgets are already stretched thin. CHCOs require a compelling business case with cost/benefit forecasts to demonstrate the anticipated returns on investing in AI, analytics, and broader digital transformation.

- **Policy**: Government decision-making often involves matters of profound consequence to people and institutions. In these matters especially, human experts must guide the responsible use of AI, ensure that it is explainable, and make the decisions. In addition, employee fears concerning job displacement should be addressed, ideally in terms of commitments to upskilling and reskilling as described below.

HCM teams have a pivotal leadership role to play in implementing AI across government and ensuring that AI solutions align with diverse organizational needs even as the rollout remains human centered, ethical, and accountable. Robust governance systems and coordination across agencies are essential for guiding both development and deployment of AI/machine learning.

Whether leaders opt for in-house development or licensing of external technologies, robust security measures are essential. These measures might include encryption, access controls,

and ensuring the AI is tested, bias free, and compliant with relevant state and national regulations. CHCOs should collaborate with agency cybersecurity experts to identify potential vulnerabilities and to design or license a secure architecture. After solutions are deployed, agencies and their vendors should conduct regular audits to ensure that AI models remain secure, relevant, and bias free as the workforce changes.

HCM departments must also exercise vigilance around ethical pitfalls and the sensitive handling of potentially personal data, including social media activity. For example, leveraging off-the-shelf large language models (LLMs)—designed to understand and generate text, genetic code, numbers, abstract data sets, and even pictures based on vast amounts of data—can accelerate progress and deliver significant value, but potential privacy and security implications necessitate careful consideration. Executive Orders, such as 14091, partially address these concerns, including the requirement that agencies eliminate algorithmic bias entirely before deploying AI.

Careful evaluation of the risks, collaboration with experts, alignment with broader agency and government strategies, and continuous oversight are key components of successfully navigating the new and complex AI landscape. By meticulously addressing these elements in partnership with other agency executives and external partners and vendors, CHCOs can set the stage for a governance model that not only supports but propels the AI and digital agenda.

AI Models Depend on Quality Data

With a governance framework in place, CHCOs can turn to other challenges associated with the use of advanced AI. None of these are likely to prove more challenging than access to reliable and high-quality workforce data.

Establishing the foundational data necessary to leverage advanced AI and reap the benefits of predictive and prescriptive analytics takes time and effort but is crucial. Every CHCO should formulate a long-term plan for developing workforce data assets, including consolidating employee data across all components of the agency or department. Over time, a unified, trustworthy data repository to base decisions on—often referred to as a single source of truth—will become increasingly critical.

For CHCOs, effectively investing in and managing workforce data are not just operational tasks, but strategic imperatives that directly determine the agency's future capabilities. Without the means of orchestrating, ingesting, and collecting workforce data, then tagging and curating it to be used as examples, agencies cannot train AI models, whether for workforce analytics or otherwise. The significance of quality data is multifaceted, encompassing accuracy and volume (size and flow), which translates to accurate AI models that can generate correct predictions and useful recommendations.

By allowing AI models to respond effectively to shifts in the landscape, quality data in sufficient volume ensure the ongoing relevance and performance of the models. Quality data help prevent errors and biases; they reinforce agency decision-making processes to serve broader

organizational objectives, including at the highest levels of human capital management—in strategic workforce planning, hiring, promotions, learning & development, DEI, and elsewhere.

Collecting and 'cleaning' data

Poor outcomes in AI initiatives, and an inability to move from the pilot to the implementation stage, often stem from a failure to ensure that proper data are available and fit for use. Start by identifying a small set of vital metrics that align with your objectives (you can expand this later); conduct an audit to identify where data are housed and who "owns" the data. Collaborate with teams or departments to understand the data landscape and the specific challenges that exist within each silo (and to negotiate access).

Assess the quality of the accessed data against measures of consistency, accuracy, completeness, and reliability (including the absence of bias). Consider running a pilot in one component of HCM to test data collection methods and quality. Most CHCOs will need to borrow expertise from their chief information officer, or contract with specialized firms to expedite this process, especially when dealing with the multiple legacy systems characteristic of many US government agencies.

Next, implement a comprehensive data governance policy to set the standards for workforce data access across your agency. Invest in data integration tools and platforms as offered by many vendors. These technologies (often AI driven) can help unify scattered data and turn disparate data sets into a coherent, usable format. Finally, focus on data quality management. Use both automated and manual verification methods to clean the data, correct errors, spot bias, and fill gaps. Addressing the dubious quality of certain data will require a combination of technology and human oversight. Continuous monitoring and improvement should be an ongoing part of the process.

Generating a sufficient volume of data

Advanced deep learning models and LLMs require significant amounts of data to generalize effectively, whereas more traditional machine learning techniques might work with smaller data sets. Collaborate with data scientists to assess the necessary volume of data tailored to the tools, models, and methods used.

If gaps remain after these data collection and cleaning steps have been taken (or if taking these steps is too complex, costly, or privacy sensitive), CHCOs might consider leveraging whatever clean and accurate workforce data are available to create additional synthetic data (artificially created information generated through algorithms and statistical methods to mimic the characteristics of real-world data).

> **»** *We need to be aware that some of our data has biases in it, historical ways that we've done things that we don't want to continue in the future. And we need to have a good awareness of what those biases in the data are and how do we approach this in a way that rectifies that.*
>
> Chris Alvares, Chief Data Officer, USDA[1]

With caution and care, limited use of synthetic data combined with real data might permit agency HCM teams to generate sufficient volume to train AI models. Synthetic data is comparatively inexpensive to create, and it avoids issues around using personally identifiable information. However, overuse of synthetic data risks creating a self-reinforcing cycle that could result in a lack of diversity in the data and flaws in the AI models trained. In other words, synthetic data may drive AI models that perform well in the lab but fail in the real world.

Beyond data limitations, agencies must advance to the next levels of analytic maturity, which include diagnostic (understanding the data to answer why something happened), predictive (using data and patterns to predict future outcomes based on probabilities), and prescriptive analytics (using data to make actionable recommendations based on predictions).

The progression from descriptive to prescriptive analytics reflects a journey from understanding the past to actively shaping the future. Agency CHCOs can use advanced AI to help predict future outcomes and suggest data-driven decisions to guide future initiatives that improve hiring, engagement, retention, learning, and performance. Without these advancements, the full potential of AI and machine learning in guiding and enhancing decision-making will not be realized.

Building AI capabilities Is HCM's Greatest Challenge

In 2023, US CEOs selected digital transformation as their first priority over the next two to three years, and CEOs from around the world ranked it among their top three. CEOs also named "attracting and retaining talent" as the number one internal issue they plan to focus on in 2023.

These findings pertain to government CHCOs in two ways. First, as corporate America automates and completes advanced stages of digitization, the pressure on government to keep pace will only mount. Second, due to workforce demographics, demand for skilled talent is not likely to ease significantly, perhaps for decades. Competition for analytical and AI-related skills specifically can be expected to intensify as AI initiatives ramp up across all sectors of the US economy.

As US government agencies increase their own digital and AI initiatives, agency HCM teams can expect to play a vital role in sourcing, hiring, and developing AI and digital talent. The success of these efforts will depend on the degree to which HCM teams themselves are "digitized" and AI-enabled. CHCOs should first ensure that their teams have the data, technology, and talent necessary to leverage advanced AI and analytics across the human capital life cycle, starting with the ability to perform accurate, agencywide strategic workforce planning that can identify current and future skills gaps as well as the optimal means of closing them.

Beyond technical skills, agencies will require AI- and digital-savvy managerial and executive talent for planning, execution, leadership, and strategy. Acquiring experienced professionals in these fields may be challenging given US government compensation levels (especially for leadership roles) that may not match those in the private sector. Agencies and their HCM

departments have alternatives to close skills gaps, however: recruit at the entry level and invest in skills development, and/or upskill and reskill current employees, particularly those with an interest in being retrained for new roles and who possess "skills adjacencies" (skills related to those in demand).

Upskilling current employees, even those with minimal IT experience, might be more achievable than competing for talent externally. Some agencies can lean on their prestige to attract high-quality entry-level talent, but others will find it difficult so long as talent shortages persist.

Agencies might also choose to fill AI and analytics skills gaps with contractors and vendors, but for several reasons, upskilled or entry-level talent might prove more valuable and effective for agencies in the longer term. Consider that:

- The overhead paid to contractors and vendors can be greater than the cost of developing entry-level talent or upskilling public servants with adjacent skills.

- Using contractors and vendors instead of upskilling entry-level and internal talent deprives agencies of the opportunity to develop future leaders of AI and digitization initiatives going forward.

- Many government organizations have long average tenure among their employees. These employees combine vital institutional and cultural knowledge with AI skills. Contractors are more transient and may require ongoing efforts at acculturation.

Prior research points to massive upskilling efforts already underway among companies pursuing strategies that rely on AI expertise.[2] The authors argue, however, that upskilling those with skills adjacencies won't be enough and that organizations will also be forced to reskill employees to meet demand. Because employees must normally change fields, reskilling proves a longer, more disruptive, and costlier process than upskilling.

> » *Nontechnical people with a general interest in learning a new software can do so to the point that after about eight weeks they can be working with AI to do things that they used to do manually, saving hundreds if not thousands of hours annually.*
>
> Program Manager, Intelligent Automation, US government agency[3]

Beyond upskilling and reskilling employees for technical and leadership roles related to AI, government departments and agencies will need to equip most public servants with the general skills and knowledge they need to work with AI and understand its impact on government policies and decision-making. Agency HCM teams can be expected to lead or at least oversee these efforts.

In addition to overseeing training for many thousands of workers across the US government, agency CHCOs must also help cultivate an environment that fosters AI success. Achieving this culture involves aligning employee and managerial attitudes and actions. Seen through this

lens, closing AI and analytics skills gaps is a multifaceted change management endeavor that demands simultaneous attention on multiple fronts.

First, focus on HCM itself

The best way for agency CHCOs to prepare their teams for a central role in transforming a US government agency around AI and digital capabilities is to first undergo that transformation themselves. CHROs must acquire the right mix of technology to support digital growth, first across HCM groups and then out to the wider workforce. Continued use of the siloed and rigid legacy technologies in place today will waste progress made on data, talent, and culture.

Agencies can accelerate the adoption and use of AI and advanced analytics by deploying proven off-the-shelf technologies that are either built on advanced AI from the ground up or incorporate AI and analytics capabilities. Alternatively, agencies can build their own, provided they have the skills in house to do so. For example, developing an in-house generative AI capability could give an agency complete control over the data and the environment in which the data operate. However, gaining this advantage involves significant investment in resources, time, and expertise. Training the ChatGPT-3 LLM, for example, is reported to have cost $5 million in computer processing costs alone.[4] Licensing a prebuilt solution and customizing it to operate securely behind the organization's firewall might prove a more efficient alternative.

> » *We can predict what jobs are going to be necessary, what skills we are going to need now and in the future. Then we can use those insights to be prescriptive—to make better decisions about HCM and workforce priorities, budgeting, and strategy.*
>
> Head of Data Analytics, US government agency[5]

Given the time, costs, and expertise needed to build advanced technologies, CHCOs should normally consider configurable vendor solutions first, such as HRIS platforms with AI-enabled workforce planning, recruiting, learning, and other tools. CHCOs should also explore newer AI technology providers that offer deployable LLMs containing potentially billions of data points to which an agency need only add its own workforce data to operate highly sophisticated AI models. Licensed tools may also prove more user friendly than in-house alternatives, allowing nontechnical staff to leverage AI with minimal training.

Depending on the vendor, developer tool kits and APIs might permit agency AI experts to customize external solutions to meet agency needs. CHCOs who move in this direction may need to expend additional effort to adopt vendors' future upgrades, but they can also build in-house AI skills that reduce dependency on vendors in the longer term. In sum, CHCOs should balance relying on external applications with developing internal, trusted capabilities. Licensing of prebuilt solutions is the fastest-growing space in AI innovation, but agencies require internal experts to assess whether government should trust vendor-constructed models.

Summary Recommendations

Advanced AI and analytics are subsets of the digital transformation agenda that virtually every US government organization is pursuing. Successful execution of a digital transformation agenda hinges on how quickly and how well HCM teams can identify and fill AI talent gaps agencywide; it requires HCM teams to gradually adopt and deploy advanced AI across the functions of workforce planning, talent acquisition, L&D, performance, and beyond.

CHCOs should spearhead an effort to adopt and adhere to an AI governance framework, then identify and collect the data necessary to train AI models and implement processes to ensure data quality, flow, and volume. Simultaneously, CHCOs should build HCM AI capabilities by acquiring and developing AI technical and leadership talent; by encouraging a digital mindset across HCM (and, eventually, the agency itself); and by acquiring modern HCM technologies featuring advanced AI and analytical tools.

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Endnotes

[1] Ron Keesing, *It's Time to Talk About User Responsibility and Generative AI*, Nextgov/FCW, August 18, 2023.

[2] Leila Douma et al., *Reskilling in the Age of AI*, Harvard Business Review, September-October 2023.

[3] The Conference Board Focus Group on AI in Federal Government HCM, August 1, 2023.

[4] Erik Brynjolfsson et al., *Generative AI at Work*, National Bureau of Economic Research working paper 33161, April 2023.

[5] Brynjolfsson et al., *Generative AI at Work*.

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